

REMARKS

In the present case, claims 1 and 11 have been amended. Claims 15-17 have been added. Claims 1-17 are now in this case. Claims 5-10 and 14 have been allowed.

The specification has been amended at paragraph 0007 to make a grammatical correction. No new matter has been added.

Claims 11-13 stand rejected under 35 U.S.C. § 102(b) for allegedly being anticipated by U.S. Patent No. 4,107,678 to Powell ("Powell").

Claim 11 specifies a method of determining the polarization of a signal from a series of horizontal sample values and a series of vertical sample values. The method specifies calculating a plurality of series of output values using sets of transfer functions and then evaluating one or more characteristics of the series of output values to provide information about the polarization of the signal.

Powell discloses a target seeker circuit that cross-correlates the returns of a cross-polarized antenna to distinguish between returns reflected by man-made targets and clutter returns. Powell does not teach or suggest method or apparatus for providing information about the polarization of a received signal, as specified by claim 11 of the present invention. Each embodiment of the target seeker circuit of Powell – disclosed in FIGS. 3, 6 and 7 – is an analog circuit having analog components such as phase shifters, oscillations, amplifier, multipliers and integrators. Thus, Powell does not teach or suggest digital processing of vertical and horizontal components of received signals. Powell also does not teach or suggest calculating a series of output values from the horizontal sample values and the vertical sample values, as required by claim 11. Thus, Powell also does not teach or suggest evaluating the series of output values, as required by claim 11.

Since Powell does not teach or suggest many of the steps required by claim 11, allowance of claim 11 is respectfully requested. Claims 12 and 13 depend from claim 11, and therefore incorporate each limitation of claim 11. Accordingly, allowance of claims 12 and 13 is also respectfully requested.

Claim 1 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Powell in view of U.S. Patent No. 5,311,192 to Varga ("Varga").

Claim 1 specifies an apparatus for determining the polarization of a signal having vertical and horizontal components. The apparatus includes one or more registers for storing a first series of sample values representing a horizontal component of a signal and for storing a second series of sample values representing a vertical component of a signal. A plurality of cyclically operative calculation elements combines values from the first and second series to provide output values for each cycle. Evaluation circuits compare characteristics of at least some of the output values so as to provide information about the polarization of the signal.

Powell has been previously discussed. Powell does not teach or suggest a plurality of cyclically operative calculation elements that combine values from the first and second series to provide output values for each cycle. Powell also does not teach or suggest evaluation circuits that compare characteristics of at least some of the output values so as to determine the polarization of the signal.

Varga discloses a process for canceling the effects of noise jamming. Varga's process involves digitizing sample signals, generating weighting co-efficients, and then using the information to select an optimal detection channel signal for target detection. *See*, Varga at column 2, line 30-56. Varga then selects one of several potential targets detection signals based on the selected optimal detection channel signal. *See*, Varga Abstract. Thus, Varga also does not teach or suggest a plurality of cyclically operative calculation elements that combine values from the first and second series to provide output values for each cycle. Further, Varga does not teach or suggest evaluation circuits that compare characteristics of at least some of the output values so as to determine the polarization of the signal.

Since neither Powell nor Varga teach or suggest the cyclically operative calculation elements or the evaluation circuit to provide information about signal polarization, as required by claim 1, neither Powell, Varga nor the combination of Powell and Varga teach or suggest the invention specified by claim 1. Accordingly, allowance of claim 1 is respectfully requested.

Claims 2-4 all depend from claim 1, either directly or indirectly. Accordingly, allowance of claims 2-4 is also respectfully requested.

New claim 15 specifies a method of determining polarization whereby first and second series of digital samples of horizontal and vertical components, respectively, of a received signal are generated and stored. The data elements from the series are processed by combining elements from the first and second series, wherein at least some of the elements are offset from each other, to determine the polarization of the signal. Support for this claim is found throughout the specification. New claim 16 depends from claim 15 and specifies over-sampling or expanding the first and second series of samples before processing. Support for this claim is found in paragraph 0032 of the specification. New claim 17 depends from claim 16 and specifies the length of the series of samples. Support for this claim is found in paragraph 0034 of the specification. None of the cited references teach or suggest the method of determining the polarization of a signal as specified in claims 15-17. Accordingly, allowance of claims 15-17 is respectfully requested.

As it is believed that all of the rejections set forth in the Office Action have been fully met, favorable reconsideration and allowance are earnestly solicited.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that he/she telephone applicant's attorney at (908) 654-5000 to overcome any additional objections.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: September 23, 2003

Respectfully submitted,



By

Glen M. Diehl

Registration No.: 33,377

LERNER, DAVID, LITTENBERG,

KRUMHOLZ & MENTLIK, LLP

600 South Avenue West

Westfield, New Jersey 07090

(908) 654-5000

Attorney for Applicant